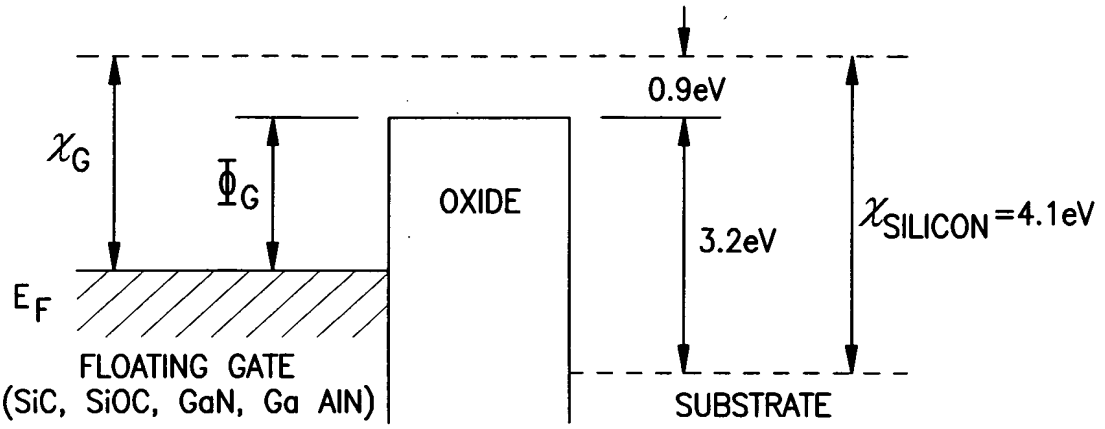


FIG. 1A
(PRIOR ART)

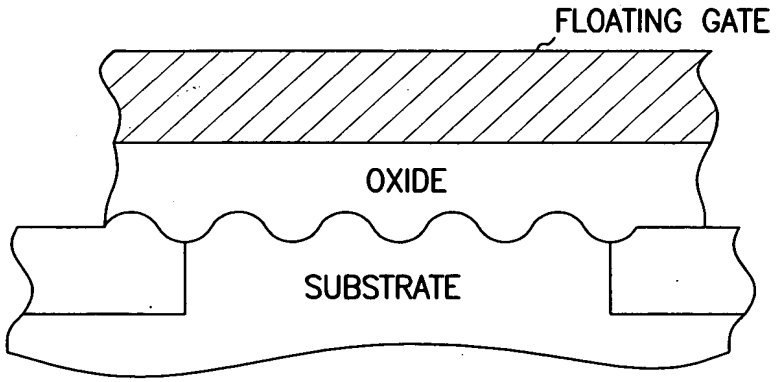


FIG. 1B
(PRIOR ART)

21

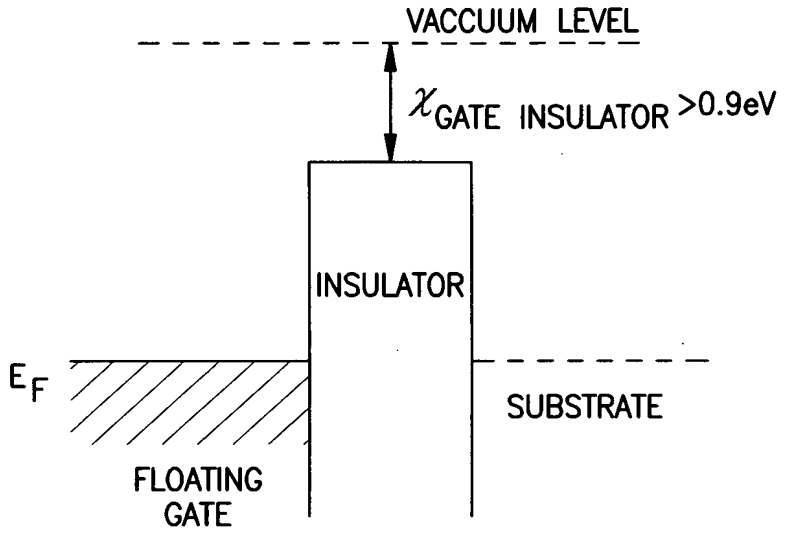


FIG. 1C
(PRIOR ART)

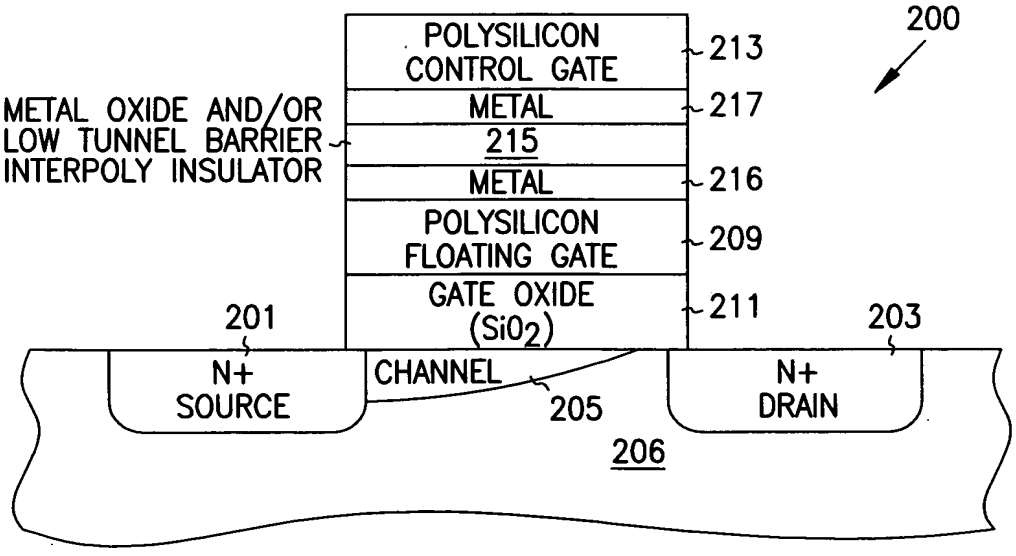


FIG. 2

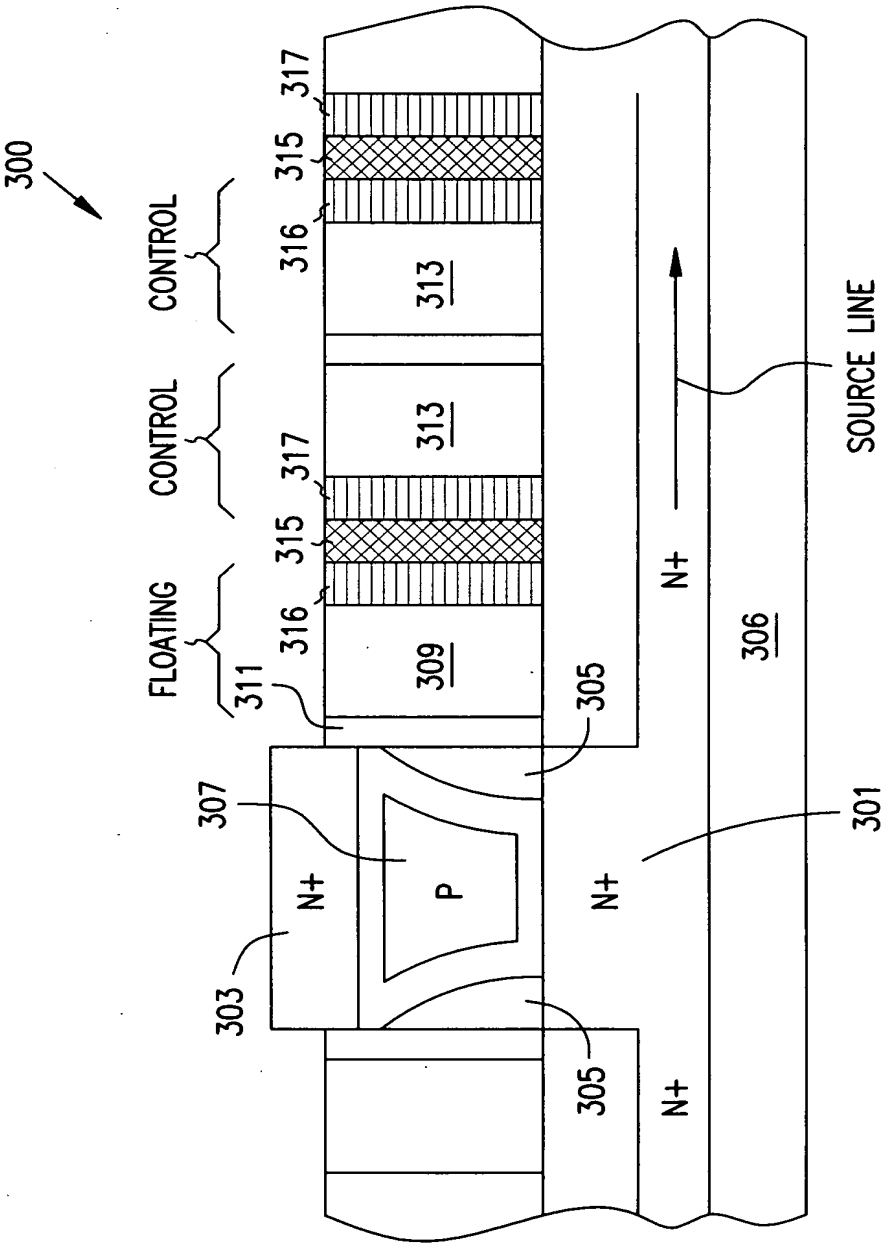


FIG. 3

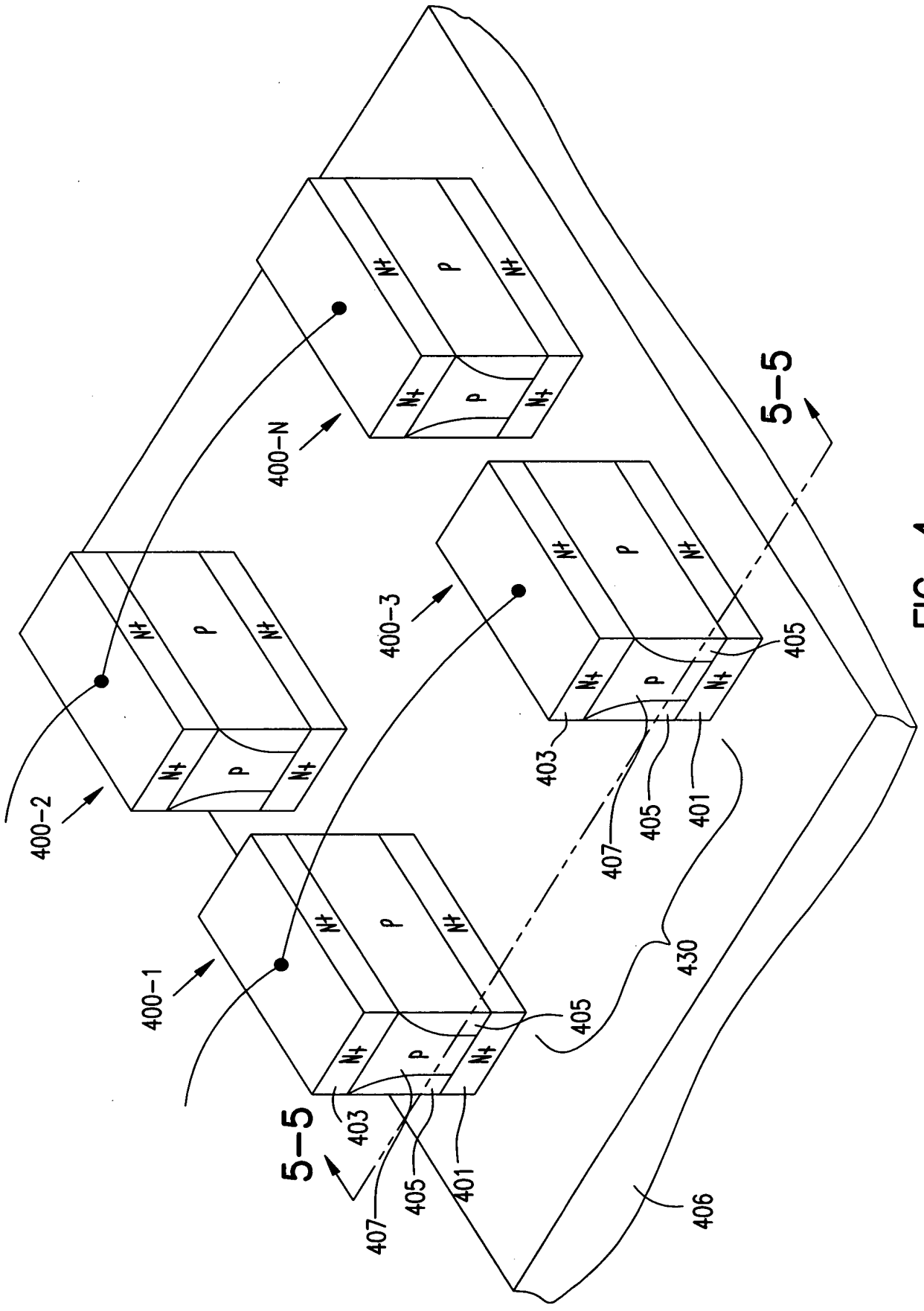


FIG. 4

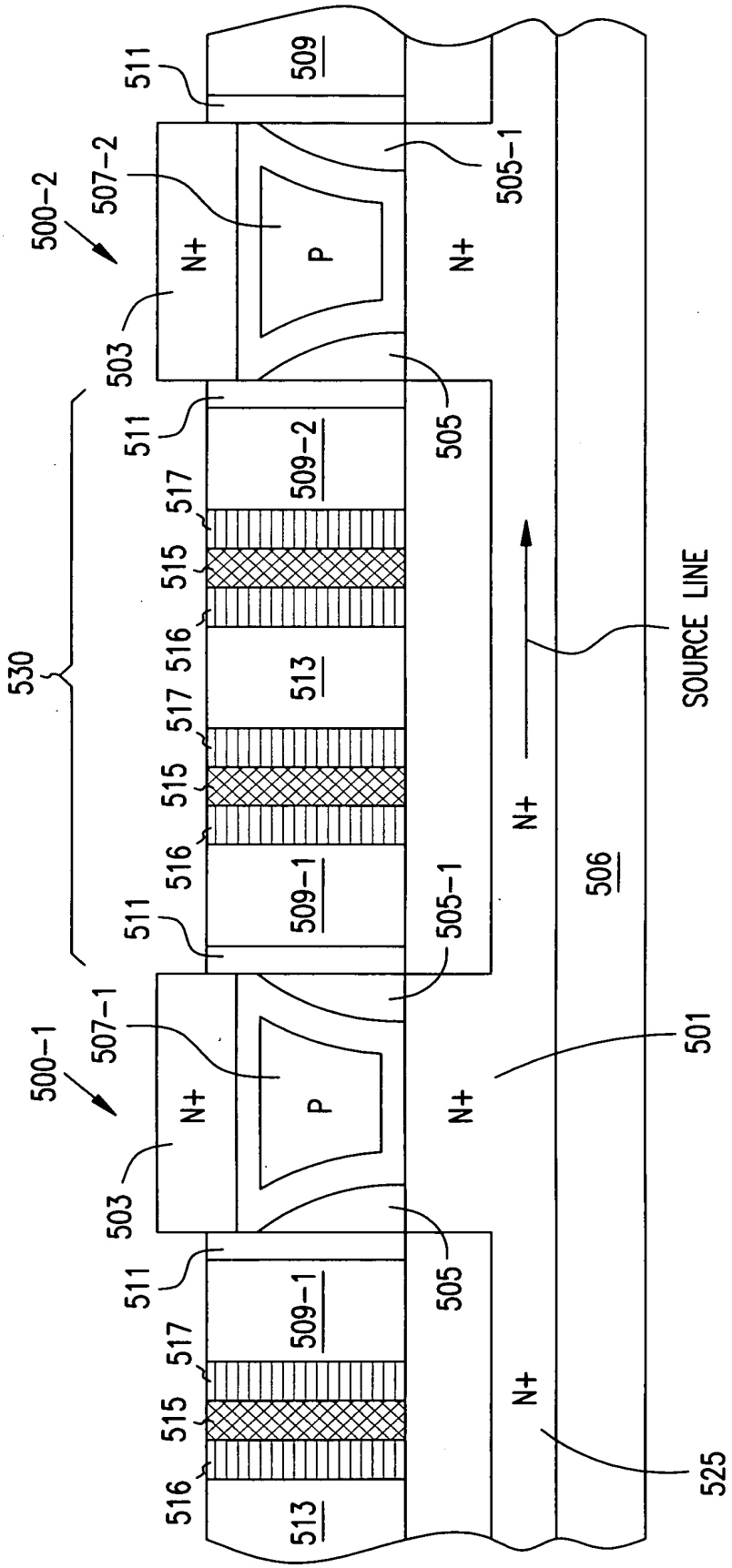

511
509
505-1
507-2
500-2
N+
P
N+
503
505
511
509-2
517
515
516
513
530
517
515
516
511
509-1
505-1
SOURCE LINE
N+
506
507-1
500-1
501
N+
P
N+
503
505
511
509-1
517
515
516
513
N+
525

FIG. 5A

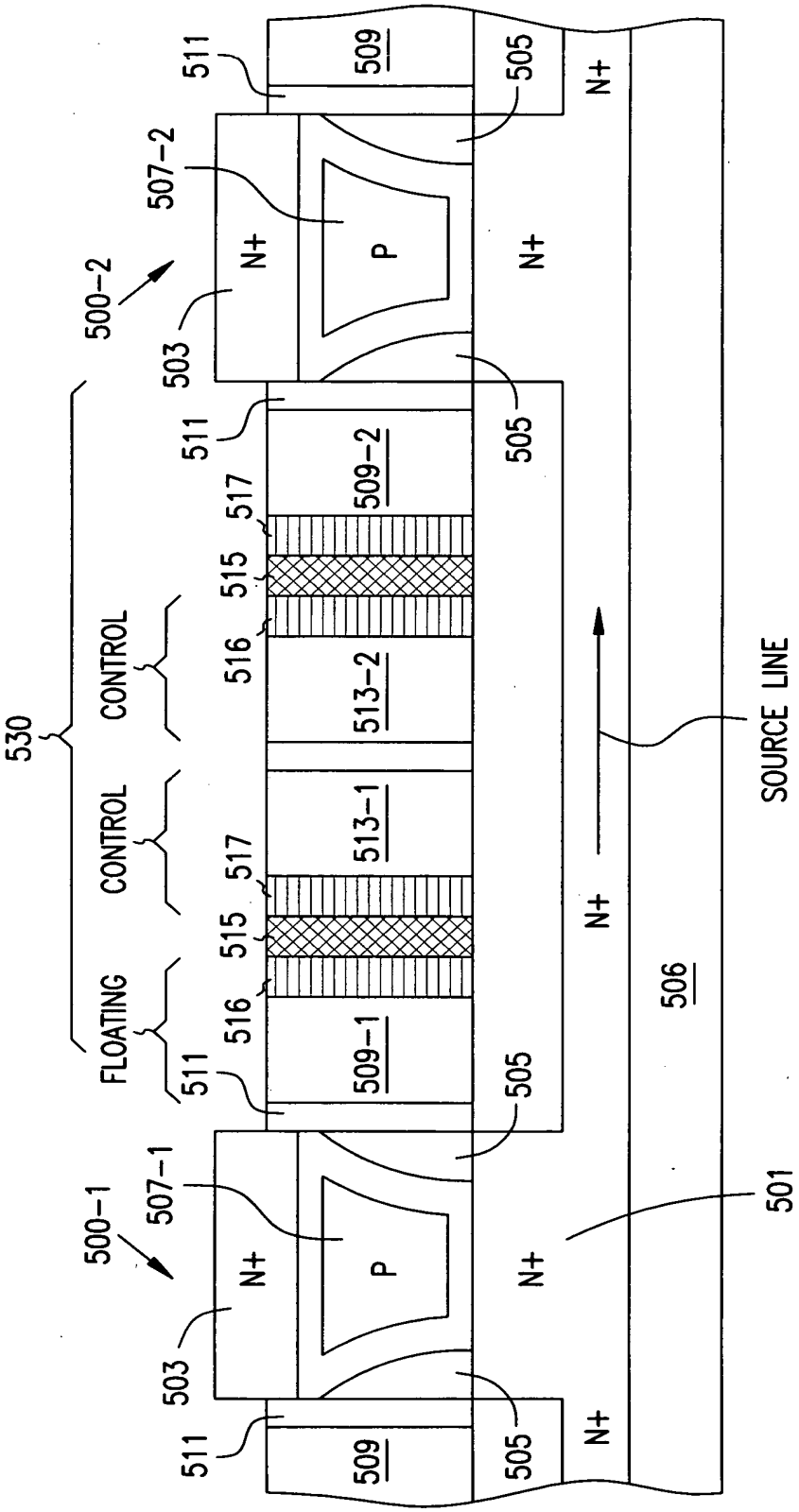

511
509
505
N+
507-2
500-2
503
P
N+
511
509-2
505
517
515
516
513-2
530
CONTROL
CONTROL
513-1
517
515
516
FLOATING
509-1
511
505
SOURCE LINE
N+
506
507-1
500-1
501
N+
P
N+
503
511
509
505
N+

FIG. 5B

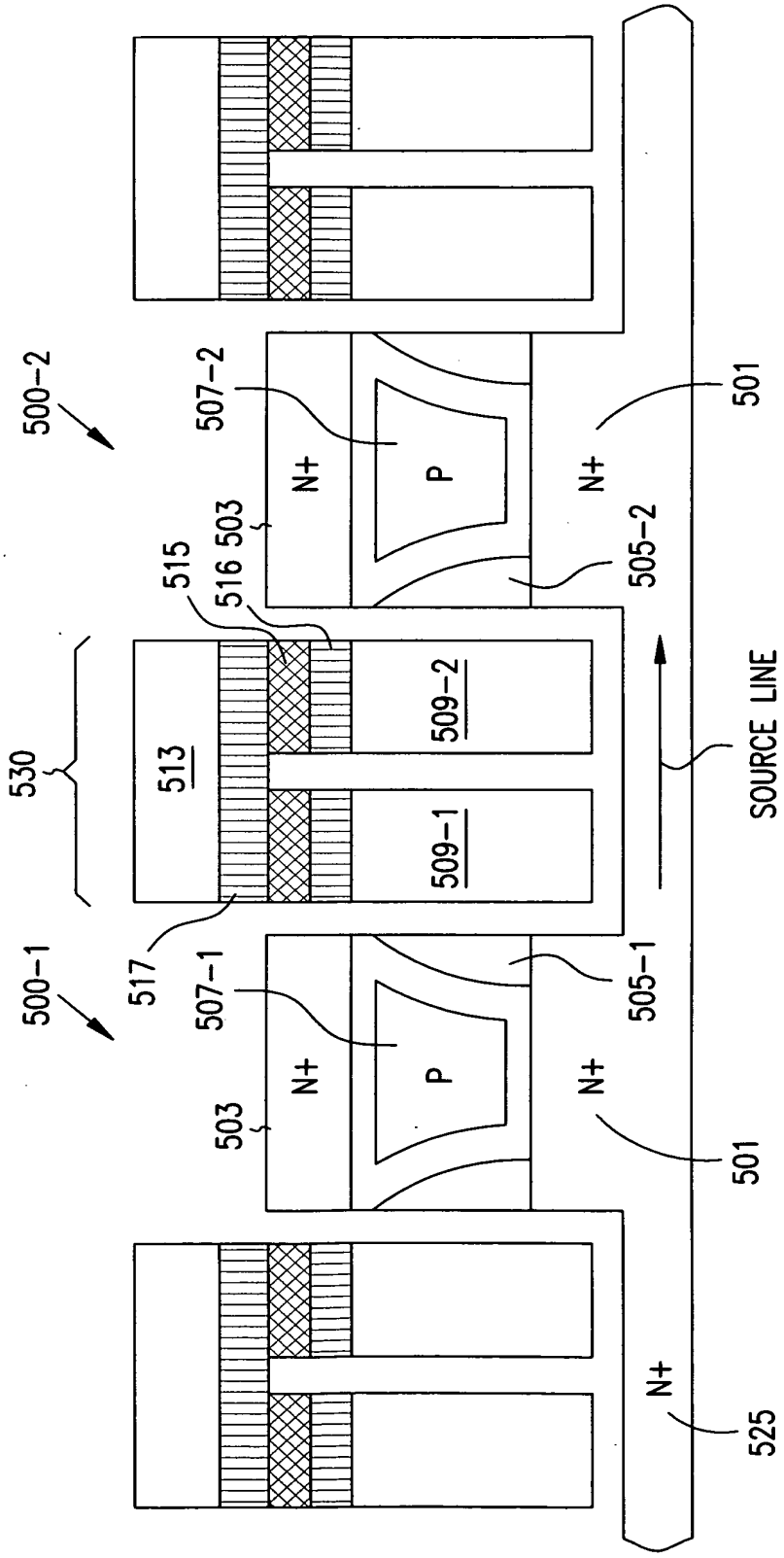

500-2
507-2
N+
P
N+
501
503
516
515
505-2
513
509-2
509-1
530
SOURCE LINE
517
500-1
507-1
505-1
503
N+
P
N+
501
N+
525

FIG. 5C

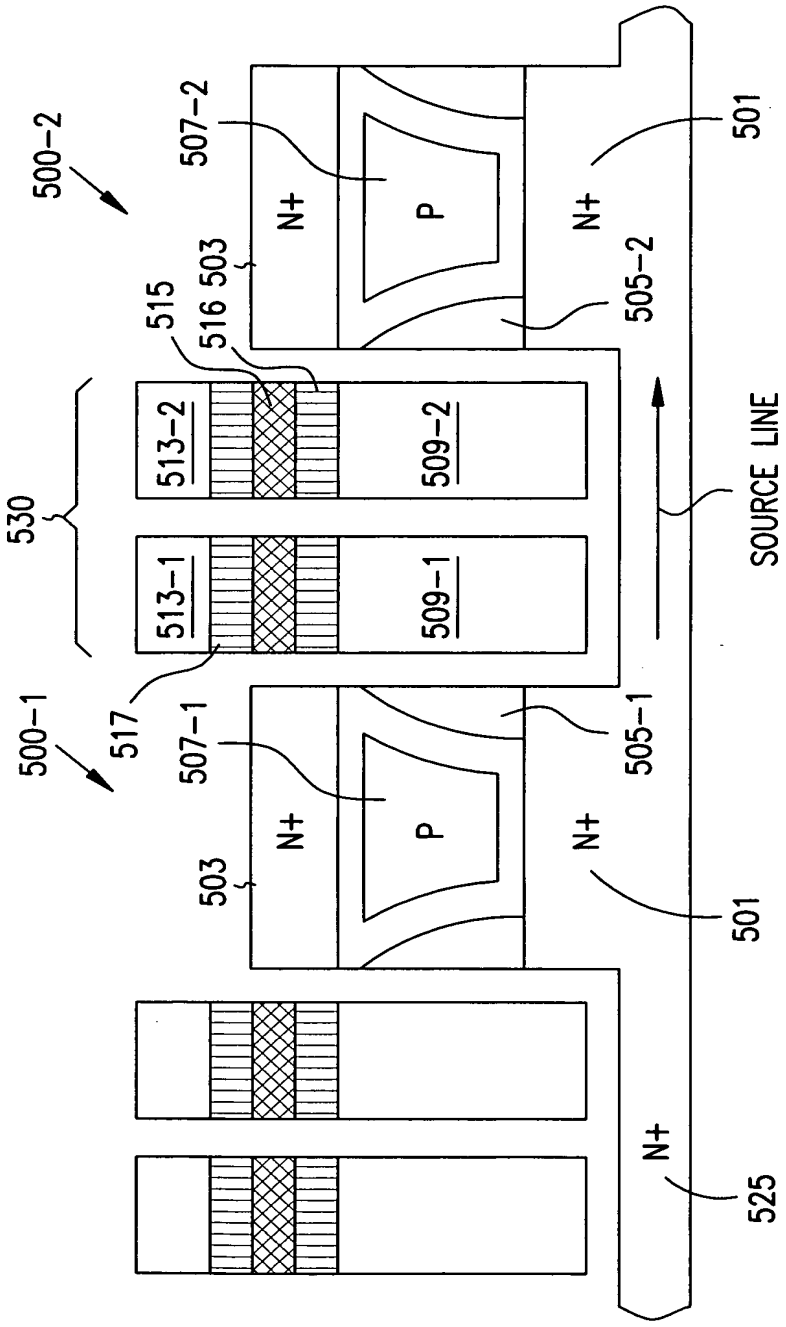

500-2
507-2
N+
P
N+
501
503
516
515
505-2
513-2
509-2
530
513-1
509-1
SOURCE LINE
500-1
517
507-1
505-1
N+
P
N+
503
501
N+
525

FIG. 5D

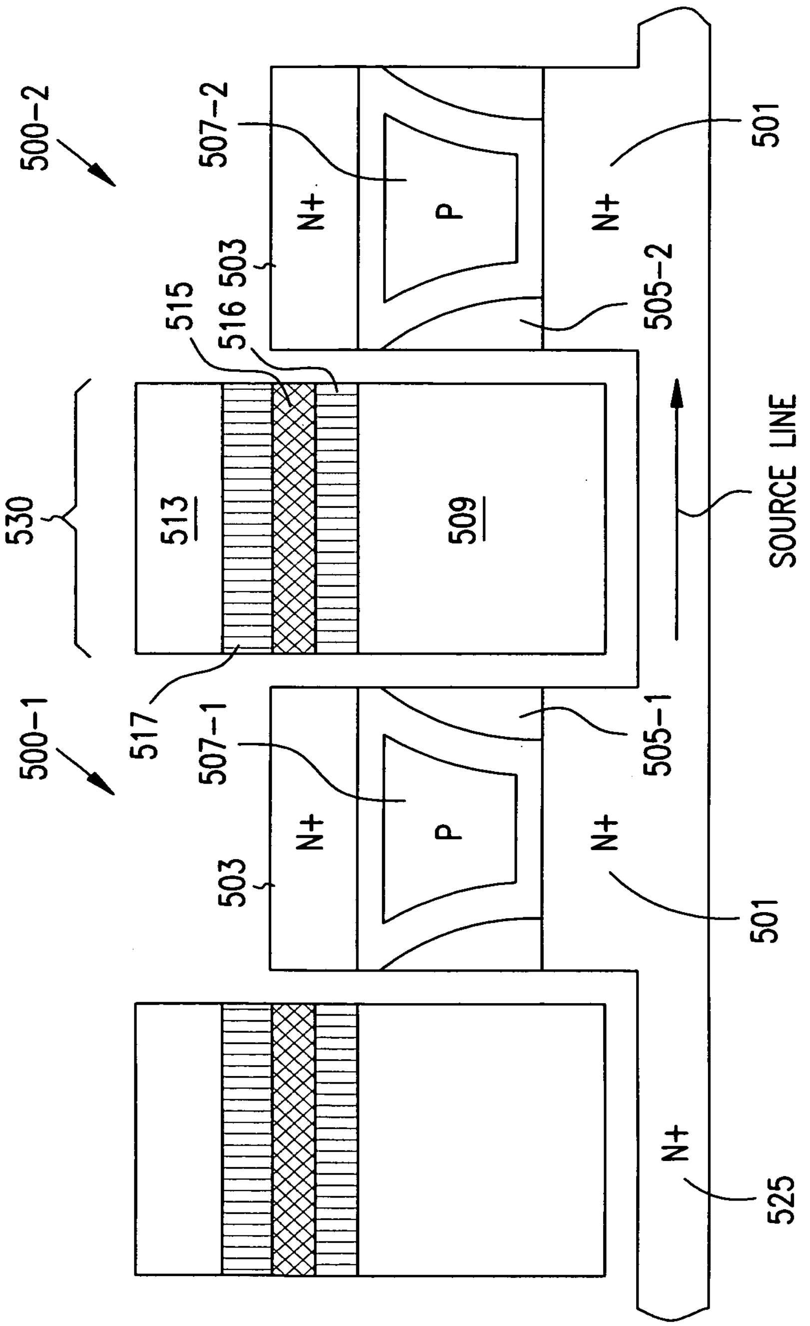

500-2
507-2
501
N+
P
N+
515
516
503
505-2
530
513
509
SOURCE LINE
500-1
517
507-1
505-1
503
N+
P
N+
501
N+
525

FIG. 5E

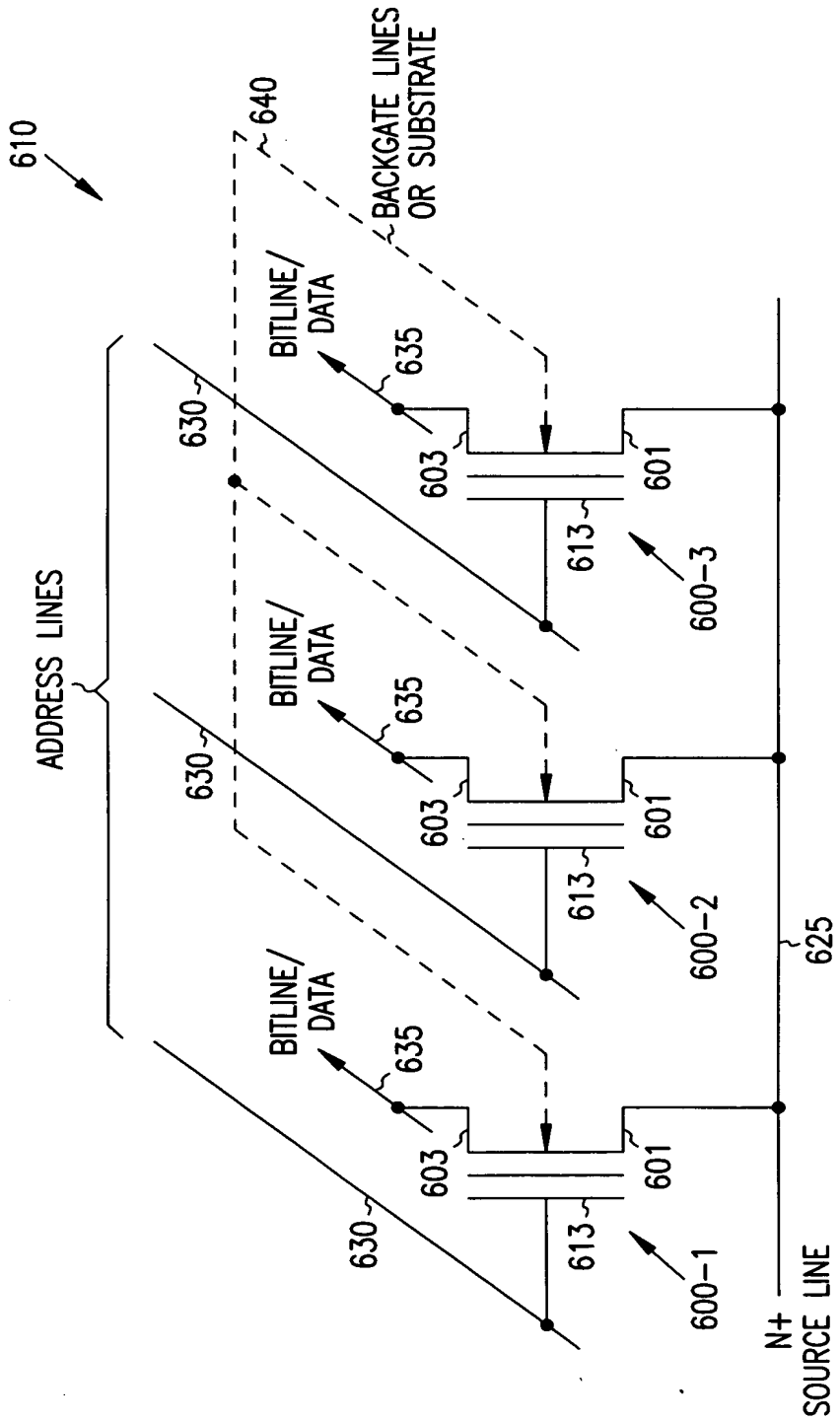

610
640
BACKGATE LINES
OR SUBSTRATE
ADDRESS LINES
BITLINE/
DATA
635
630
603
601
613
600-3
600-2
600-1
625
N+
SOURCE LINE

FIG. 6A

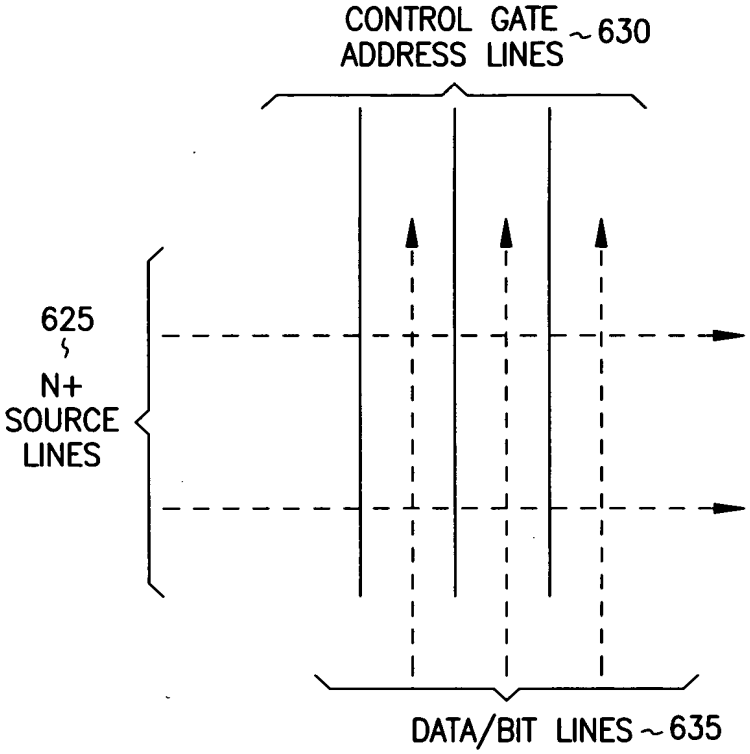

CONTROL GATE
ADDRESS LINES
630
625
N+
SOURCE
LINES
DATA/BIT LINES
635

FIG. 6B

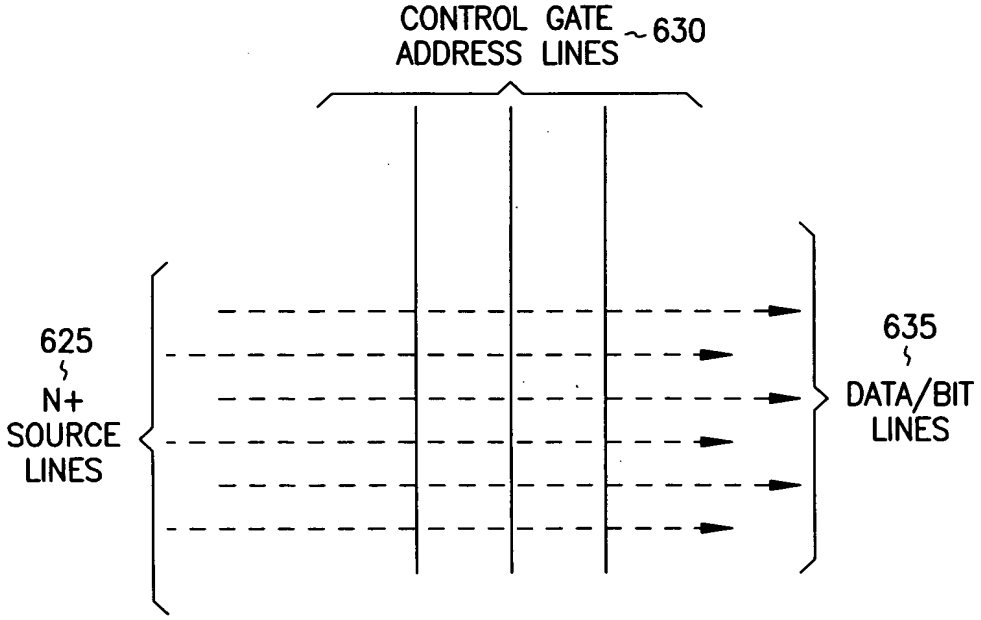

CONTROL GATE
ADDRESS LINES
630
625
N+
SOURCE
LINES
635
DATA/BIT
LINES

FIG. 6C

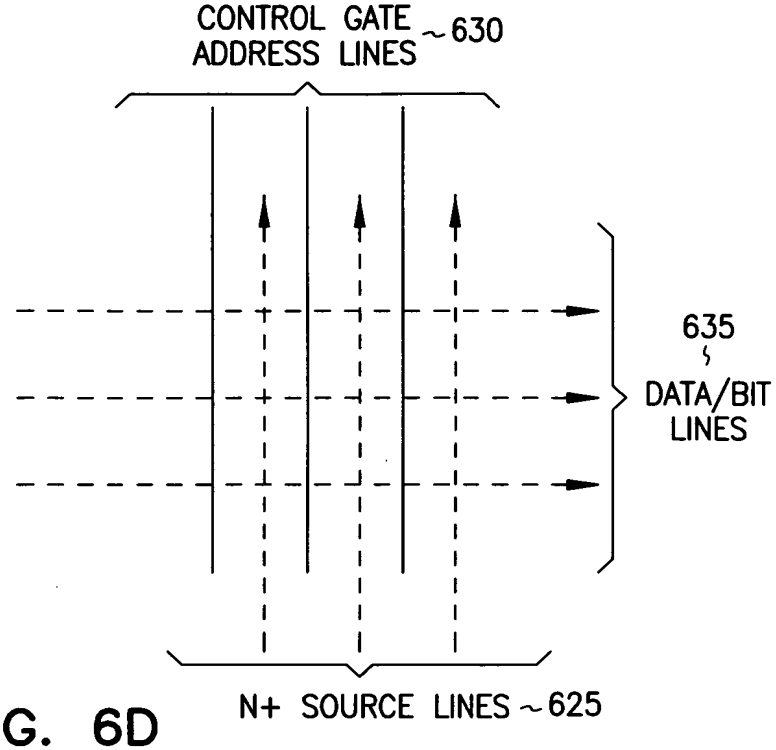

CONTROL GATE ADDRESS LINES
630
635
DATA/BIT LINES
N+ SOURCE LINES
625

FIG. 6D

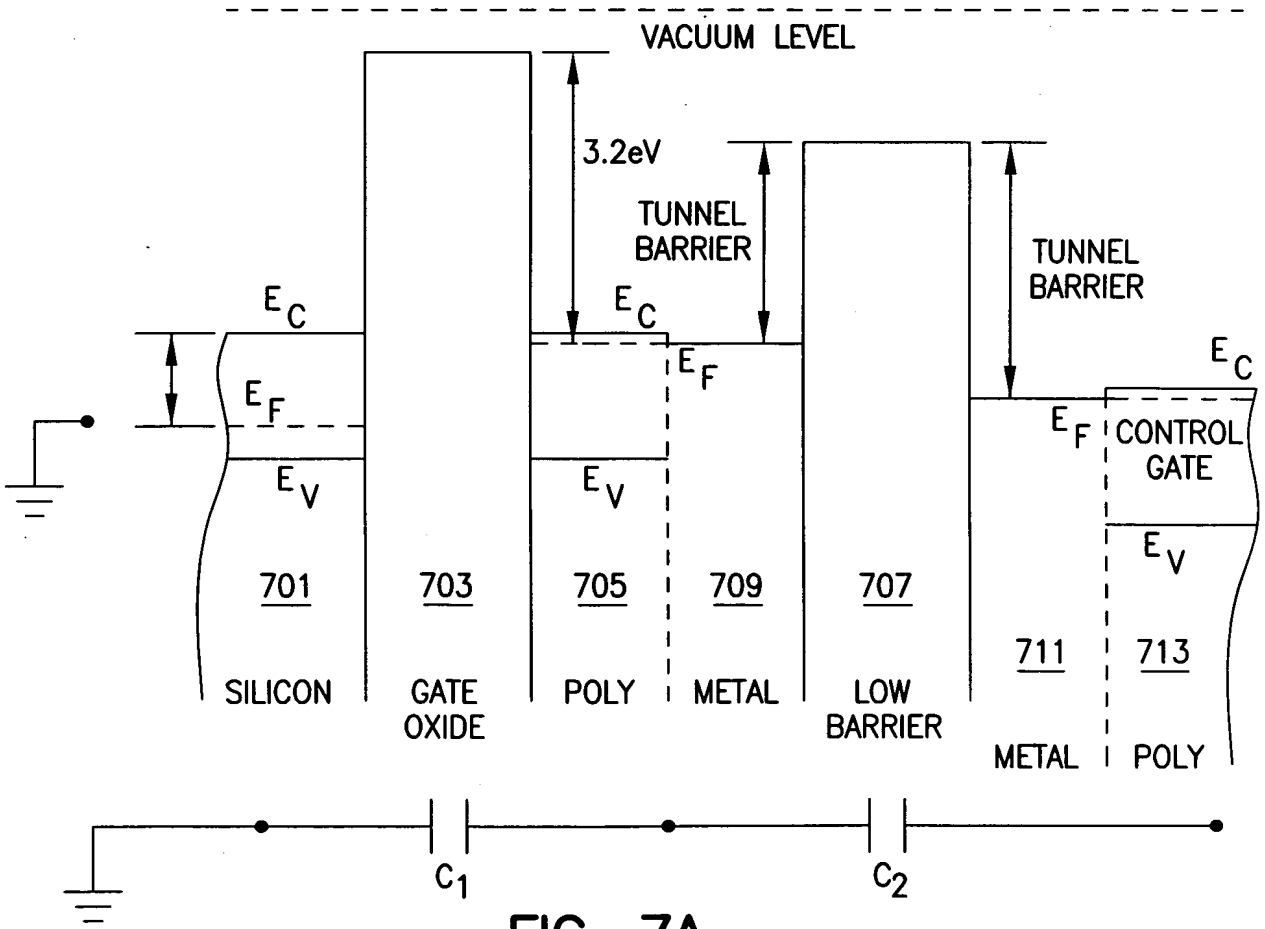
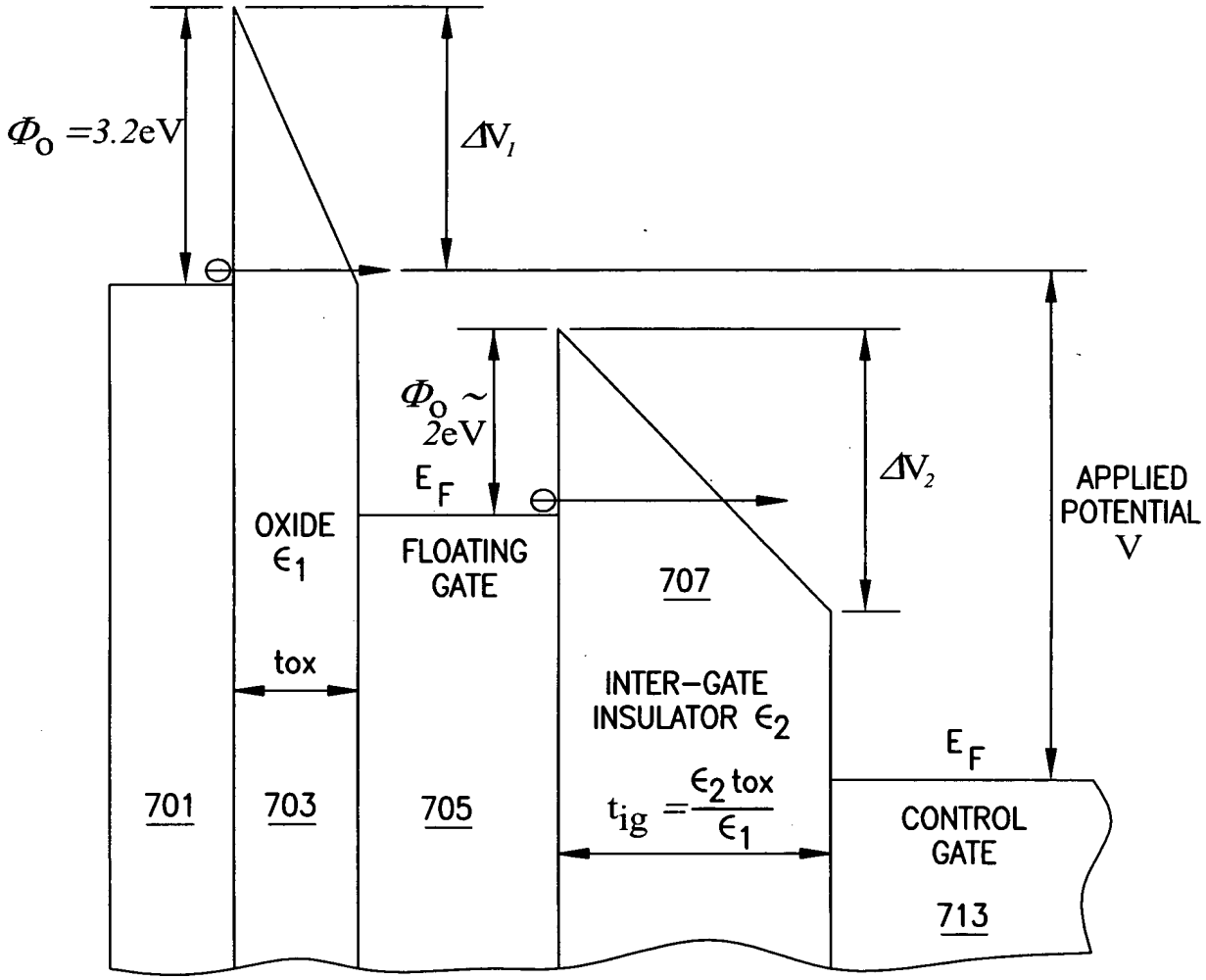

VACUUM LEVEL
3.2eV
TUNNEL BARRIER
TUNNEL BARRIER
E_C
E_F
E_V
CONTROL GATE
701
703
705
709
707
711
713
SILICON
GATE OXIDE
POLY
METAL
LOW BARRIER
METAL
POLY
C_1
C_2

FIG. 7A



$$J = \frac{q^2 E^2}{4\pi h \Phi} e^{-E_o/E} \qquad E_o = \frac{8\pi}{3} \frac{\sqrt{2m_q^*}\,\Phi^{3/2}}{h}$$

FIG. 7B

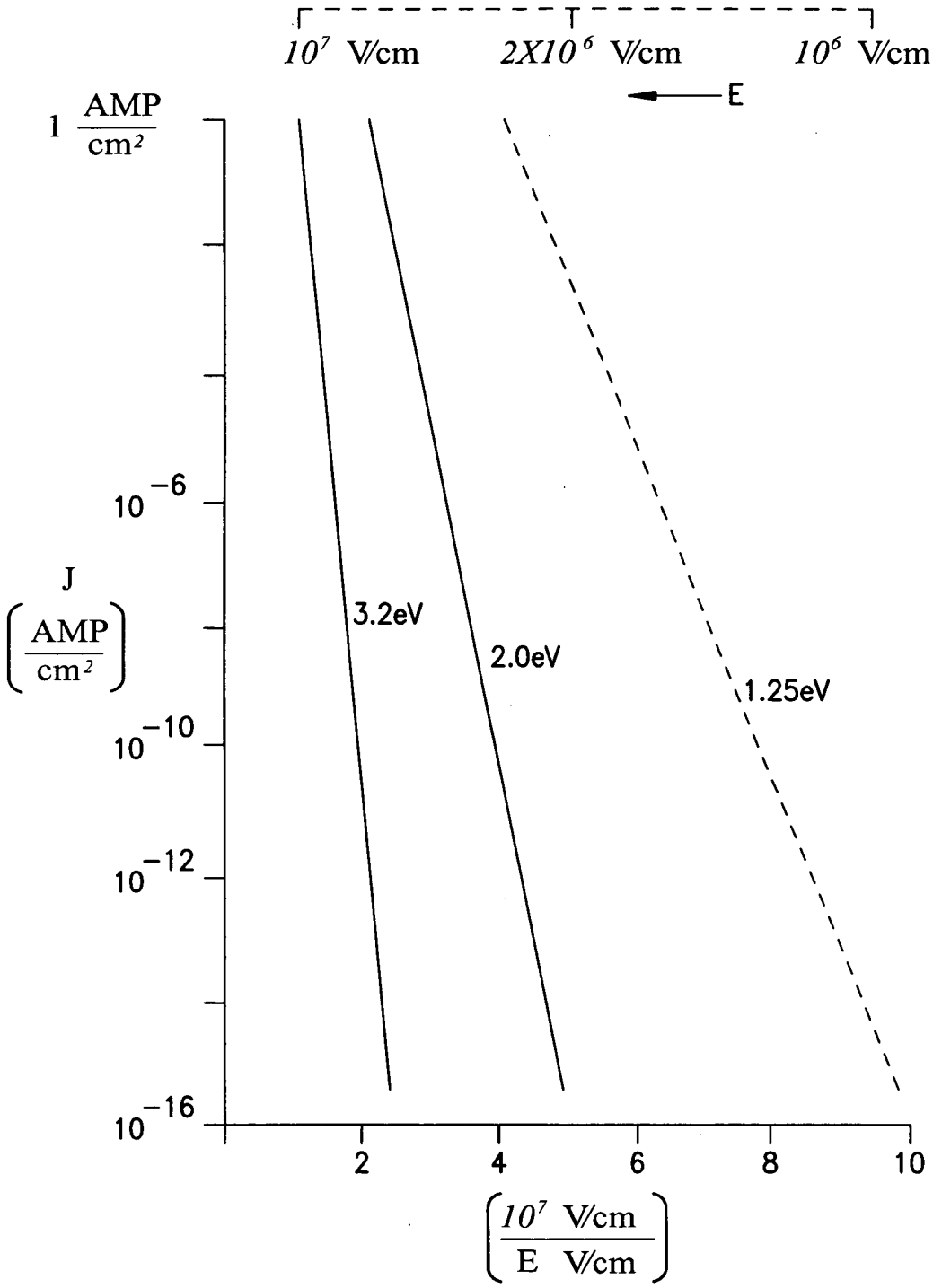

10^7 V/cm
$2X10^6$ V/cm
10^6 V/cm
E
1 AMP/cm²
10^{-6}
10^{-10}
10^{-12}
10^{-16}
J (AMP/cm²)
3.2eV
2.0eV
1.25eV
2
4
6
8
10
(10^7 V/cm / E V/cm)

FIG. 7C

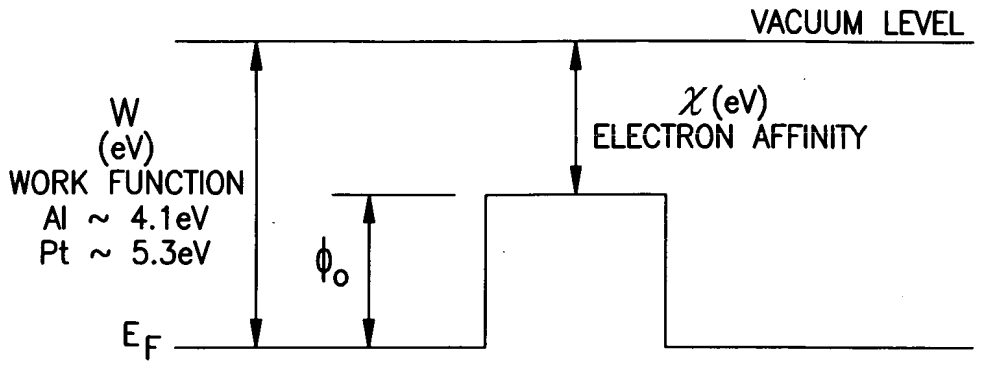


FIG. 8

	E_G	ϵ_r	ϵ_∞	χ	ϕ_o (Pt)	ϕ_o (Al)
Conventional Insulators						
SiO_2	~ 8 eV	4	2.25	0.9 eV		3.2 eV
Si_3N_4	~ 5 eV	7.5	3.8			2.4 eV
Metal Oxides						
Al_2O_3	7.6 eV	9 to 11	3.4			~ 2 eV
NiO						
Transition Metal Oxides						
Ta_2O_5	4.65 - 4.85		4.8	3.3	2.0	0.8 eV
TiO_2	6.8	30 80	7.8	3.9	est. 1.2 eV	
ZrO_2	5 - 7.8	18.5 25	4.8	2.5		1.4
Nb_2O_5	3.1	35-50				
Y_2O_3	6		4.4			2.3
Gd_2O_3						
Perovskite Oxides						
$SrBi_2Ta_2O_3$	4.1		5.3	3.3	2.0	0.8 eV
$SrTiO_3$	3.3		6.1	3.9	1.4	0.2 eV
$PbTiO_3$	3.4		6.25	3.5	1.8	0.6 eV
$PbZrO_3$	3.7		4.8		est. 1.4 eV	0.2 eV

FIG. 9

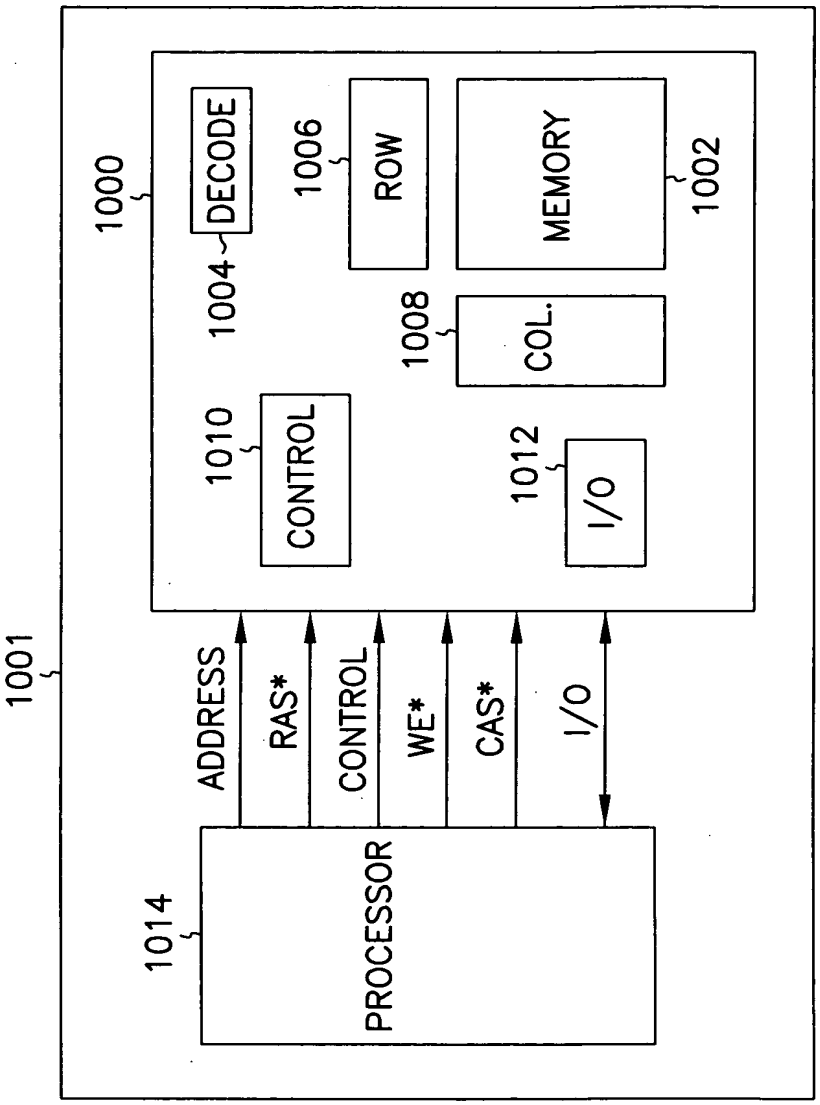

1001
1000
DECODE
1004
1006
ROW
MEMORY
1002
1008
COL.
1010
CONTROL
1012
I/O
ADDRESS
RAS*
CONTROL
WE*
CAS*
I/O
1014
PROCESSOR

FIG. 10